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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**  
**UTILITY PATENT APPLICATION TRANSMITTAL**  
(For new non-provisional applications under 37 CFR § 1.53(b))

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Atty. Dkt. No:	5596-00200
Inventor(s):	Nobuyoshi Morimoto
Title:	An Improved System and Method for Identifying Individual Users Accessing a Web Site

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<b>CERTIFICATE OF EXPRESS MAIL</b> UNDER 37 C.F.R. §1.10
"Express Mail" mailing label number: EL569687724US DATE OF DEPOSIT: June 6, 2000
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. §1.10 on the date indicated above and is addressed to: Assistant Commissioner for Patents Box Patent Application Washington, DC 20231
 Debra L. Tix

**Application Elements**

1. ☒ Filing Fee

The filing fee is calculated as shown below.

Total Claims	37	-20=	17	x \$18.00=	\$306.00
Independent Claims	12	-3 =	9	x \$78.00=	\$702.00
Multiple Dependent Claims				Fee:	\$0.00
				Basic Fee:	\$690.00
				Assignment Fee	\$0.00
				Sub-Total:	\$1,698.00
				Reduction by 50% for Small Entity:	\$849.00
				Total:	\$849.00

☒ A check in the amount of \$849.00 is enclosed.

The Commissioner is hereby authorized to charge any other fees which may be required or credit any overpayment to Conley, Rose, & Tayon, P.C., Deposit Account No. 03-2769/5596-00200/DRC.

**One duplicate copy of this form is enclosed.**

2. ☒ Specification

17 page(s) of specification; 10 page(s) of claims, 1 page(s) of abstract

3. ☒ Drawings

Formal Figure(s) 1-5 on 5 sheet(s)

4. ☒ Oath or Declaration

☒ Newly executed

☐ Copy from a prior application (see 37 C.F.R. § 1.63(d))

Deletion of Inventor(s) (in continuation or divisional applications):

☐ Delete the following inventor(s) named in the prior non-provisional application:

☐ The inventor(s) to be deleted are set forth on a signed sheet attached hereto.

5. ☐ The entire disclosure of the prior application referred to above is considered to be part of the accompanying application and is hereby incorporated by reference herein.
6. ☐ Microfiche Computer Program (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
- ☐ Computer Readable copy
- ☐ Paper Copy (identical to computer copy)
- ☐ Statement verifying identity of above copies
8. ☐ Assignment Papers
9. Power of Attorney
- ☒ Is attached.
- ☐ The power of attorney appears in the original papers of the prior application.
- ☐ Since the power does not appear in the original papers, a copy of the power in the prior application is enclosed.
10. ☐ Information Disclosure Statement (IDS)
- ☐ Copies of IDS Citations
11. Amendments
- ☐ A preliminary amendment is enclosed.
- ☐ Cancel in this application claim(s) \_\_\_\_\_ before calculating the filing fee. At least one independent claim is retained for filing purposes.
- ☐ Amend the specification by inserting before the first line the sentence: \_\_\_\_\_.
12. ☒ Return Receipt Postcard
13. Small Entity Status
- ☒ A small entity statement is enclosed.
- ☐ A small entity statement was filed in the prior non-provisional application and such status is still proper and desired.
- ☐ Is no longer claimed.
14. ☐ Priority of foreign application number \_\_\_\_\_, filed on \_\_\_\_\_ in \_\_\_\_\_ is claimed under 35 U.S.C. §§ 119(a)-(d)
15. ☐ Petition under 37 C.F.R. § 136 for Extension of Time
16. ☐ Other: \_\_\_\_\_

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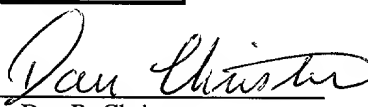
Name

Registration No.

Date

39,943

June 6, 2000

  
Dan R. Christen

PATENT  
5596-00200

Applicant or Patentee: Nobuyoshi Morimoto  
Serial or Patent No.: unknown  
Atty's Docket No.: 5596-00200  
Filed or Issued: herewith  
For: AN IMPROVED SYSTEM AND METHOD FOR IDENTIFYING INDIVIDUAL USERS ACCESSING A WEB SITE

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY  
STATUS (37 C.F.R. § 1.9(F) AND § 1.27(B)) - INDEPENDENT INVENTOR**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 C.F.R. § 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, United States Code, to the Patent and Trademark Office with regard to the invention entitled AN IMPROVED SYSTEM AND METHOD FOR IDENTIFYING INDIVIDUAL USERS ACCESSING A WEB SITE, described in:

☒ [X] the specification filed herewith  
☐ [ ] application serial no.: \_\_\_\_\_, filed: \_\_\_\_\_  
☐ [ ] patent no.: \_\_\_\_\_, issued: \_\_\_\_\_

I have not assigned, granted, conveyed or licensed and are under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor under 37 C.F.R. § 1.9(c) if the person had made the invention, or to any concern which would not qualify as a small business concern under 37 C.F.R. § 1.9(d) or a nonprofit organization under 37 C.F.R. § 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

☒ [ x] no such person, concern or organization  
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\*Note: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 C.F.R. § 1.27)

FULL NAME \_\_\_\_\_

ADDRESS: \_\_\_\_\_

☐ [ ] Individual      ☐ [ ] Small Business Concern      ☐ [ ] Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. § 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Nobuyoshi Morimoto

NAME OF INVENTOR

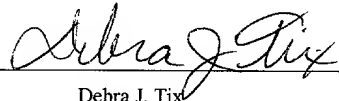


Signature of Inventor

June 1, 2000

Date

PATENT  
5596-00200

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AN IMPROVED SYSTEM AND METHOD FOR IDENTIFYING INDIVIDUAL USERS  
ACCESSING A WEB SITE

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## **BACKGROUND OF THE INVENTION**

### **1. Field of the Invention**

5           The present invention generally relates to the field of the Internet. More particularly, the present invention relates to an improved system and method for identifying unique users accessing a web site.

### **2. Description of the Related Art**

10           Internet commerce has become an increasingly popular form of commerce in the United States and throughout the world. In general, Internet-based commerce, often referred to as e-commerce, provides advantages to both suppliers and consumers. E-commerce provides vendors and service providers the ability to greatly increase their  
15       sales channel and distribution network with minimal cost. An Internet commerce site provides a convenient, effective and secure mechanism for potential buyers to browse, select and purchase goods or services in an easy and simple fashion.

20           An important consideration for owners and/or operators of web sites, which have been designed to handle Internet commerce, is the amount of web traffic flowing through the site. There are various metrics used to measure web traffic. Various web traffic analysis and tracking software is available to provide the owners and/or operators of web sites with detailed statistics. One commonly used metric, for example, is the number of web page accesses or web hits on a page of a web site. Many Internet sites display a  
25       counter to show the number of visitors since last counter reset. The number of web hits per page, measured over a given time period, may have a significant impact on the advertising revenues generated by the web site.

30           Web site logs and other software designed to measure and analyze web traffic, can provide a wealth of additional information regarding the user. For example, it may

include detail such as the operating system of user's computer, web browser software used to access web site, hourly/daily/weekly frequency distribution of web hits, Internet Provider (IP) address of user, country of registration for the user's Internet Service Provider (ISP), etc.

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Although it has been possible to get detailed statistics referenced above, such as the number of raw hits per web site, the data collected is often incorrect, inadequate and often misleading. Up to now, it has been difficult to accurately identify and count the number of clients accessing a web site. For example, raw hit data shows the number of times each file has been requested at a web site. It can give an idea of the number of clients visiting a web site. However, it may not be able to disclose further detail. Assuming 1,000 hits were recorded on a web site, the raw hit data may not be able to report whether the hits were generated by 10 visitors racking up 100 hits a piece, or by 200 visitors creating five hits each, or by one visitor creating 1000 hits.

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One prior art method to identify unique, distinct or individual users is based on the use of cookies. Cookies are identifiers placed on a user's computer system by a web site that the user may have visited. Web sites may use cookies to identify and track a user's movement through the web site. The use of cookies is thus considered an intrusive technology. Many Internet users have expressed concerns over the privacy issues related to the use of cookies. In order to protect their privacy, many users disable the use of cookies (a standard option in many of the popular web browsers). Furthermore, some types of browser software and earlier versions of popular web browsers do not support the use of cookies. Also, users can refuse cookies on a per cookie basis, or modify their local cookie file at will. As a result, it has been difficult to accurately identify and count individual users using cookies.

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Another prior art method to identify individual users is to require user registration before entering a web site. This method, in many respects, is similar to the use of cookies.

However, unlike cookies (which have become virtually transparent and often unknown to the user) the user must knowingly enter self-identifying information to gain access to the web site. Many Internet users have expressed concerns over the privacy issues related to the need for user registration to enter a web site, in addition to the inconvenience of remembering yet another user ID and password. As a result, it has been difficult to accurately count individual and distinct users who have not participated in user registration.

Yet another prior art method used to identify individual users is tracking Internet Provider (IP) addressed to identify users. However, larger Internet Service Providers (ISP's) such as America On-line (AOL) use a proxy server. A proxy server sits between a client application, such as a web browser, and a real web server located on the Internet. The proxy server intercepts all requests to the real server to see if the proxy can fulfill the requests itself. If not, the proxy server forwards the request to the real web server. It may be possible for hundreds or perhaps thousands of clients, such as AOL clients, to be accessing a web site simultaneously but may still show the same IP address. As a result, it has been difficult to accurately identify and count individual users who may have been assigned to the same proxy server.

For these reasons, it would be desirable to provide an improved method and system for counting individual users accessing a web site. It would be desirable for the improved method and system to use non-intrusive technology, which would address the privacy concerns of users, yet at the same time be able to identify individual users accessing a web site. It would be desirable for the improved method and system to identify and count all unique users logged on to a proxy server and accessing the web site.



## SUMMARY OF THE INVENTION

The present invention provides various embodiments of an improved method and system for identifying individual users accessing a web site. The system and the method allow a web site server to identify distinct users by using a unique identifier associated with each client computer system requesting access to the web site. The unique identifier comprises an Internet address, such as the Internet Protocol (IP) address, and a time value associated with each client computer system or browser application requesting access to the web site.

On starting up a web browser on a client computer system, an application program may synchronize the internal real-time clock included with the client computer system with a global time standard. The synchronized time value included in the unique identifier may be based on an event associated with the client computer system, such as the start of a web browser. Similar time synchronization may occur on web servers.

In one embodiment, one or more records may be stored in a database. Each record comprises a unique identifier corresponding to each computer user accessing the web site. A new client computer system may request access to the web site. In response, the web site server may request the new client computer system to provide information comprising the Internet address and the time value. The new client computer system may send the requested information to the web site server. A web site server hosting the requested web site may determine the uniqueness of the client computer system by comparing unique identifier records of users accessing the web site with those stored in the database. A user may be identified as distinct if no matching record exists in the database.

In another embodiment, the user of the client computer system may request access to a web site. The initial request may include the unique identifier comprising the Internet

address and the time value. A web site server hosting the requested web site may determine the uniqueness of the client computer system by comparing unique identifier records, stored in a database, of users accessing the web site. A user may be identified as distinct if no matching record exists in the database.

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Advantageously, multiple client computer systems using a common Internet address may be differentiated by using this method. Furthermore, user's privacy may also be protected as the unique identifiers are erased once the client computer system's user closes the web browser or powers down the computer.

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### **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a network diagram of a wide area network, which is suitable for implementing various embodiments;

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Figure 2 is an illustration of a typical computer system, which is suitable for implementing various embodiments;

Figure 3 illustrates an exemplary e-commerce network system for identifying  
20 distinctive computer users accessing a web site according to one embodiment;

Figure 4 illustrates a flow chart for identifying distinctive computer users  
accessing a web site according to one embodiment; and

25 Figure 5 illustrates a database record for identifying distinctive computer users  
accessing a web site according to one embodiment.

While the invention is susceptible to various modifications and alternative forms,  
specific embodiments thereof are shown by way of example in the drawings and will

herein be described in detail. It should be understood, however, that the drawings and detailed description thereto are not intended to limit the invention to the particular form disclosed, but on the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the present invention as defined by the appended claims. Note, the headings are for organizational purposes only and are not meant to be used to limit or interpret the description or claims.

## DETAILED DESCRIPTION OF SEVERAL EMBODIMENTS

### Figure 1: Wide Area Network

Figure 1 illustrates a wide area network (WAN) according to one embodiment. WAN 102 is a network that spans a relatively large geographical area. The Internet is an example of WAN 102. WAN 102 typically includes a plurality of computer systems which are interconnected through one or more networks. Although one particular configuration is shown in Figure 1, WAN 102 may include a variety of heterogeneous computer systems and networks which are interconnected in a variety of ways and which run a variety of software applications.

One or more local area networks (LANs) 104 may be coupled to WAN 102. A LAN 104 is a network that spans a relatively small area. Typically, a LAN 104 is confined to a single building or group of buildings. Each node (i.e., individual computer system or device) on a LAN 104 preferably has its own CPU with which it executes programs, and each node is also able to access data and devices anywhere on the LAN 104. The LAN 104 thus allows many users to share devices (e.g., printers) as well as data stored on file servers. The LAN 104 may be characterized by any of a variety of types of topology (i.e., the geometric arrangement of devices on the network), of protocols (i.e., the rules and encoding specifications for sending data, and whether the

network uses a peer-to-peer or client/server architecture), and of media (e.g., twisted-pair wire, coaxial cables, fiber optic cables, radio waves).

Each LAN 104 includes a plurality of interconnected computer systems and optionally one or more other devices: for example, one or more workstations 110a, one or more personal computers 112a, one or more laptop or notebook computer systems 114, one or more server computer systems 116, and one or more network printers 118. As illustrated in Figure 1, an example LAN 104 may include one of each of computer systems 110a, 112a, 114, and 116, and one printer 118. The LAN 104 may be coupled to other computer systems and/or other devices and/or other LANs 104 through WAN 102. Private communication networks, often referred to as an Intranet 304a, may comprise of one or more LAN's 104 and one or more WAN's 102.

One or more mainframe computer systems 120 may be coupled to WAN 102. As shown, the mainframe 120 may be coupled to a storage device or file server 124 and mainframe terminals 122a, 122b, and 122c. The mainframe terminals 122a, 122b, and 122c may access data stored in the storage device or file server 124 coupled to or included in the mainframe computer system 120.

WAN 102 may also include computer systems, which are connected to WAN 102 individually and not through a LAN 104: as illustrated, for purposes of example, a workstation 110b and a personal computer 112b. For example, WAN 102 may include computer systems, which are geographically remote and connected to each other through the Internet or the Intranet.

Figure 2: Typical computer system

Figure 2 illustrates a typical computer system 150, which is suitable for implementing various embodiments of a system and method for identifying distinctive computer users accessing a web site. Each computer system 150 typically includes

components such as a CPU 152 with an associated memory medium such as floppy disks 160, CD-ROM (not shown), etc. The memory medium may store program instructions for computer programs, wherein the program instructions are executable by the CPU 152. The computer system 150 may further include a display device such as a monitor 154, an  
5 alphanumeric input device such as a keyboard 156, communication device such as a modem 159 and a directional input device such as a mouse 158.

In one embodiment, the computer system 150 may be a client computer 306, operable by a computer user, to execute the computer programs to identify distinctive  
10 computer users accessing a web site as described herein. In another embodiment, the computer system 150 may be an e-commerce server 302 operable to execute the computer programs to identify distinctive computer users accessing a web site as described herein. Other embodiments of the computer system 150 may include, but are not limited to, a proxy server 312, a local Internet server 322, a mainframe computer, a  
15 personal computer, and several others as described herein.

The computer system 150 preferably includes a memory medium on which computer programs according to various embodiments may be stored. The term "memory medium" is intended to include an installation medium, e.g., a CD-ROM, or floppy disks  
20 160, a computer system memory such as DRAM, SRAM, EDO RAM, Rambus RAM, etc., or a non-volatile memory such as a magnetic media, e.g., a hard drive, or optical storage. The memory medium may include other types of memory as well, or combinations thereof. In addition, the memory medium may be located in a first computer in which the programs are executed, or may be located in a second different computer which connects to the first  
25 computer over a network. In the latter instance, the second computer provides the program instructions to the first computer for execution. The computer system 150 may also include a time keeping device such as a real-time clock. The real-time clock of the computer system 150 may be, periodically or on demand, synchronized with a global standard time clock. Also, the computer system 150 may take various forms, including but not limited to a

personal computer system, mainframe computer system, workstation, network appliance, Internet appliance, personal digital assistant (PDA), Internet enabled PDA, web television system, Internet enabled cellular telephone or any other similar device. In general, the term "computer system" can be broadly defined to encompass any device having a processor,  
5 which executes instructions from a memory medium.

The memory medium preferably stores a software program or programs for identifying distinctive computer users accessing a web site as described herein. The software program(s) may be implemented in any of various ways, including procedure-  
10 based techniques, component-based techniques, and/or object-oriented techniques, among others. For example, the software program may be implemented using ActiveX controls, programming languages such as C++, Java, VB, etc., object oriented software based on COM/DCOM and/or CORBA objects, JavaBeans, Microsoft Foundation Classes (MFC), browser-based applications (e.g., Java applets), traditional programs, or other technologies  
15 or methodologies, as desired. A CPU, such as the host CPU 152, executing code and data from the memory medium includes a means for creating and executing the software program or programs according to the methods and/or block diagrams described below.

Figure 3: Network System for Identifying a Distinct Computer User Accessing a Web  
20 Site

Figure 3 illustrates a simplified and exemplary Internet commerce or e-commerce network system for identifying distinctive computer users accessing a web site according to one embodiment of the present invention. The system shown in Figure 3 may utilize  
25 one or more identification techniques to identify distinct computer users in e-commerce applications.

As used herein, the term "Computer User" is intended to include any person who can operate a computer 150 to gain access to an Internet web site hosted by server 302. In

one embodiment, the access to an Internet web site may be provided by a proxy server 312. As used herein, the term "web site" is intended to include all Internet 304 as well as Intranet 304a sites, including e-commerce sites and groups of non-commercial Web pages, which can be accessed by a Uniform Resource Locator (URL).

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As shown, the system may include an Internet server (local) 322, a proxy server 312 and an e-commerce server 302. All three servers shown are various embodiments of the computer system 150. The e-commerce server 302 is preferably maintained by a vendor who offers goods or services over the Internet. One example of an e-commerce  
10 vendor is Amazon.com, which sells books and other items over the Internet. In one embodiment, a web site may not directly offer goods and services for sale at the web site. For example, it may be a portal site to serve as a facilitator for buyers and sellers rather than offering goods and services directly for sale on its web site. The web site may only provide information to client computer users by providing URL links to buyers and  
15 sellers. A search engine web site, as another example, may only provide links to relevant web sites or its advertisers but may not sell goods or services at its own web site.

As shown, the e-commerce server 302 may be connected to a network 104, preferably the Internet 304. The Internet 304 is currently the primary mechanism for  
20 performing electronic commerce. However, the present invention may be used with any of various types of LAN's and/or WAN's, such as the Internet 304 and/or the Intranet 304a, which connects computers and networks of computers together, thereby providing the connectivity for enabling electronic commerce to operate.

25 A client computer 306 may also be connected to the Internet 304 directly or via a local Internet server 322. One or more client computers 306a may be connected to the Internet 304 via a proxy server 312 and an Intranet 304a. The client computer system 306 user may launch or execute Web browser software for allowing a user of the client computer 306 i.e., a computer user, to browse and/or search the Internet 304. The client

computer system 306 also enables the user to conduct e-commerce transactions over the Internet 304. For example, an e-commerce transaction may include a request for information, a purchase of a product, a payment, a service appointment request, etc.

When the user of the client computer 306 desires to obtain information and/or purchase a

5 good or service from a vendor over the Internet 304, the Web browser software preferably accesses the Web page of the respective e-commerce server, such as e-commerce server 302. The client may access the Web page of the e-commerce server 302 directly or may access the site through a proxy server 312 or some other third party like a search engine. When the client Web browser accesses the Web page of the e-commerce server 302, the e-commerce server 302 may recognize the computer user 306  
10 as a distinct user. The web hit counter may be incremented by one for each distinct user.

The e-commerce server 302 may subsequently provide various data and information to the client browser on the client system 306, possibly including the  
15 products (goods and/or services) offered, descriptions and prices of these products, and other information that would typically be valuable to the purchaser of a product or a service. As used herein, the term “product” is intended to include various types of goods or services, such as books, CDs, content subscription services, furniture, online auction items, clothing, ISP service, consumer electronics, travel, software, medical supplies,  
20 computer systems etc., or various services such as loans (e.g., auto, mortgage, and home re-financing loans), securities (e.g., stocks, retirement accounts, bonds, and mutual funds), or insurance (e.g., life, health, auto, and home owner's insurance), among others.

The e-commerce server 302 may be operated by an e-commerce vendor, or on  
25 behalf of the e-commerce vendor by a third party company, such as a web site hosting service provider, an application service provider, etc.

Figure 3 illustrates an exemplary embodiment including one e-commerce server 302, one client computer system 306, one proxy server 312 connected with one or more



client computers 306a via Intranet 304a, and one Internet Server (Local) 322 which may be connected to the Internet 104. However, it is noted that the present invention may be utilized with respect to any number of e-commerce servers 302, proxy servers 312, and clients 306 or 306a.

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This embodiment provides a number of benefits to web site hosts as well as users. First, the counting of web hits is more accurate. Users logged on through proxy servers, such as America On-line clients, would be more likely to be identified as unique users despite having the same Internet address. This may enable more accurate web hit counting. Allocation of advertising revenues may thus potentially be improved by keeping an accurate track of the number of web hits and number of unique users. Second, this embodiment may offer a safer, privacy-enhanced browsing environment to users by using a non-intrusive method for tracking distinct users. In contrast, prior art methods rely on the use of intrusive technology such as cookies, user registration, etc., and thus do not accommodate user privacy concerns.

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#### Figure 4: Flow Chart For Identifying Individual Users Accessing A Web Site

Figure 4 is a flow chart illustrating a method to identify individual users accessing a web site, according to one embodiment. In step 400, the e-commerce server 302 may store records in a database wherein each record corresponds to a distinct computer user requesting access to the web site. Figure 5 illustrates an example of one embodiment of such a database for use in counting unique users.

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Criteria for the definition and measurement of a distinct computer user may be established by various organizations such as the Internet Advertising Bureau, the web site vendor, etc. Due to the fast changing Internet technology no universally accepted definitions currently exist for widely used terms such as web hits.

Every element of a requested page (including text, graphics, and interactive items) may often be counted as a web hit. Web hits may not be the preferred unit of site-traffic measurement because the number of web hits per page varies widely. Web hits may often be confused with page views. A page view is the number of times a web page is requested. Page views, not web hits, may often be the preferred counting method for web site-traffic estimates and measurement. For example, a distinct computer user may access a web site ten times during a specified time interval of 30-minutes. One web site vendor may count those as one web hit whereas another web site vendor may count those as ten web hits. A web site vendor may establish that multiple accesses by the same user within a specified time interval (e.g. thirty minutes) may be counted as a single hit for tracking purposes.

Attributes or properties that may be associated with a distinct computer user may be specified in a variety of ways. Prior art methods, which rely on the use of cookies and/or user registration, are considered as intrusive to the privacy of the computer users. Specifying an Internet address 500 and a time value 510 associated with a distinct computer user is a unique, non-intrusive and non-persistent method to identify individual users.

The definition of the time value 510 attribute is unique for each distinct computer user accessing a web site during a specified interval of time. In one embodiment, the time value is derived from a synchronized, global time standard like the one maintained by the United States Naval Observatory or by Greenwich Mean Time (GMT). When the client computer 106 user launches a web browser to gain access to a web site, an application program or plug-in may be concurrently launched to synchronize the computer's or browser's real time clock with the global time standard. In one embodiment, the time value attribute may be specified as being associated with a unique event associated with the client computer 306. The launch of the application program for time synchronization or the launch of the web browser software may be examples of such events. It is highly

unlikely that two distinct computer users, with a common Internet address, would launch the web browser software to access the same web site at the same instant in time. As such, the combination of using the Internet address and the synchronized time value is a unique, non-intrusive method to identify individual users. Client computers 306a, which may be served by a single proxy server 312, may still be identified as distinct users since each client computer user 306a will have a unique combination of Internet address 500 and time value 510. Since web browsers may be opened and closed at-will by the user, the time value associated with each of the client computers 306a may vary and is not persistent like the cookies.

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In another embodiment, in addition to the client computer synchronizing time with the global time standard, the time keeping device included with the proxy server and/or the web server hosting the web site, may also be synchronized with the global time standard. The time synchronization for servers may occur automatically based on a specified periodic time interval or may be synchronized based on an event.

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In another embodiment, the time value may indicate the synchronized real-time at which the web site access request was generated. In this embodiment, it may be possible for the web site vendor to identify the approximate geographic location, relative to GMT, of the client computer user 306. Varieties of other embodiments to specify a time value 510 are also possible.

20

In one embodiment, each record 520 stored in the database comprises an Internet address 500, such as an Internet Protocol (IP) address, and a time value 510. In one embodiment, the time value may reflect the real-time at which the client computer's time clock was synchronized with the global time standard. Each record 520 stored in the database corresponds to a distinct computer user accessing a web site or group of web sites. The number of records included in the database will vary corresponding to the number of distinct computer users accessing a web site. The records stored in the

25

database may be dynamically and/or automatically modified. As additional client computer 306 users seek access to the web site, new records can be added. As existing client computer users may have not visited the same web site after the initial access and within a specified time period, their corresponding record may have been deleted.

5

In step 410, the e-commerce server 302 receives a request from a new client computer 306 user to access the web site. In step 420, and in response to step 410, the e-commerce server 302 sends a request to the new client computer 306 user to provide information to uniquely identify itself. In one embodiment, the information includes an Internet address 500 and a time value 510 associated with the client computer 306.

In step 430, the e-commerce server 302 receives the requested information from the new client computer 306 user. In step 440, the e-commerce server 302 determines whether a matching record for the new client computer 306 user exists in the database. In one embodiment, the determination can be made by performing a query on a relational database. In another embodiment, the determination can be made by invoking a method associated with the computer user object using an object-oriented database. In step 450, if no matching record is found then the computer user is identified as distinct (e.g., an advertising counter corresponding to the number of unique hits may be incremented). If a matching record is found in the database, the matching record may be examined for a timestamp 530. In step 444, the timestamp may be compared with a predetermined maximum time Tmax. Currently no industry wide definition exists for defining Tmax. It is specified individually for each web server. However, as more web advertising related Internet standards are developed it may be possible that industry adopts a time standard Tstd for Tmax. For example, an advertiser and web site host may agree that to qualify as a unique user, the user must not have accessed the web site within the previous thirty minutes. If the last access for the user was more than Tmax (e.g., thirty minutes ago), then the user may nevertheless be counted as a unique user in step 450. Otherwise, if the unique user has accessed the web site within Tmax, then the user is not counted as a

unique user. In step 460, the record is already accessing the web site and is not to be identified as distinct. Note, the terms distinct and unique are used interchangeably herein. Further note that steps 444 and 460 are optional in some embodiments. For example, in some embodiments no timestamp may be involved (i.e., once a user has  
5 accessed the system, they are not counted in step 450 until they either exit their browser or power down their computer, which leads to a new time value for the next access). In yet another embodiment, the database may simply be purged on a periodic basis (e.g., daily). During the purge process, all records may be cleared, or only records older than a predetermined time Tmax maybe purged.

10

In another embodiment, step 400 may be implicitly performed but may not be explicitly identified as a separate step. In yet another embodiment, steps 410, 420 and 430 may be combined into one step, wherein the e-commerce server 302 receives a request from a new client computer 306 user to access a web site. Furthermore, the initial  
15 request also includes information such as an Internet address 500 and a time value 510, which uniquely identifies the new client computer 306 user.

As illustrated above, the method to identify distinct computer users accessing a web site may also be applied in various business applications. In one embodiment, steps  
20 400 through 450 may also be applied to illustrate a new business method for counting web hits at a web site (e.g., to track unique users for advertising revenue). In another embodiment, the above method to identify distinct computer users accessing a web site may also be extended to specifically measure hits from emerging client computer embodiments such as Internet appliances, cellular telephones with a browser or wireless  
25 PDA's.

Although the system and method of the present invention have been described in connection with several embodiments, the invention is not intended to be limited to the specific forms set forth herein, but on the contrary, it is intended to cover such

alternatives, modifications, and equivalents as can be reasonably included within the spirit and scope of the invention as defined by the appended claims.

Case 1:17-cv-01000-01

**WHAT IS CLAIMED IS:**

1. A method for identifying distinct users accessing a web site, the method comprising:

5 storing one or more records in a database, wherein each record comprises an Internet address and a time value, and wherein each record corresponds to a different computer accessing said web site;

receiving a first request from a first computer to access the web site;

10 sending a request for information to said first computer, wherein said information comprises a first Internet address and a first time value corresponding to said first computer;

receiving said information;

determining whether a matching record for said first Internet address and said first time value exists in said database; and

15 identifying said first computer as a distinct user if said matching record does not exist in said database.

2. The method of claim 1, wherein said time value is associated with a user-defined event.

20

3. The method of claim 2, wherein said user-defined event is a launch of a web browser software on said first computer system.

25 4. The method of claim 1, wherein said time value is generated by a time keeping device, wherein said time keeping device is configured to synchronize said time value with a global time keeping standard clock.

5. The method of claim 1, wherein said Internet address is an Internet Protocol (IP) address.

6. The method of claim 1, wherein the database is an object oriented database or a relational database.

5 7. The method of claim 1, further comprising generating and updating a timestamp for each record, wherein said identifying comprises identifying said first computer user as a distinct computer user only if said matching record does not exist in said database and said timestamp for said matching record is older than a predetermined maximum time.

10 8. The system of claim 1, wherein said first computer is a personal computer, a laptop computer, a notebook computer, an Internet-enabled cellular phone, an Internet-enabled personal digital assistant, or an Internet-enabled television.

15 9. A system for identifying a distinct computer user accessing a web site, the system comprising:  
a client computer system operated by a computer user;  
a web site server computer system;  
wherein the client computer system is operable to connect with the web  
site server for gaining access to said web site in response to a request from said  
20 computer user; and  
wherein the web site server is operable to:  
store one or more records in a database, wherein each record comprises an  
Internet address and a time value, and wherein each record corresponds to a  
computer user accessing said web site;  
25 receive a first request from a first computer user to access the web site;  
send a request for information to said first computer user, wherein said  
information comprises a first Internet address and a first time value corresponding  
to said first computer user;  
receive said information;



determine whether a matching record for said first Internet address and said first time value exists in said database;

identify said first computer user as a distinct computer user if said matching record does not exist in said database.

5

10. The system of claim 9, further comprising a time keeping device of said web site server computer system, wherein a time value of said time keeping device is synchronized with a global time keeping standard clock.

10 11. The system of claim 9, wherein said client computer system is one of the following: a personal computer, a laptop computer, a notebook computer, an Internet-enabled cellular phone, an Internet-enabled personal digital assistant, or an Internet-enabled television.

15 12. A system for identifying a distinct computer user accessing a web site, the system comprising:

a client computer system operated by a computer user; and

a web site server, wherein the web site server is operable to connect with the

client computer system for providing web site access to said client

20 computer system in response to a request from said computer user,

wherein the client computer system is operable to:

launch a web browser software;

execute a program to synchronize time;

send a first request to said web site server to access the web site;

25 receive a request for information from said web site server, wherein said

information comprises a first Internet address and a first time value

corresponding to said client computer system; and

send said information.

13. The system of claim 12, wherein said web site server further comprises a time keeping device configured to maintain a time value by synchronizing said time value with a global time keeping standard clock.

5 14. The system of claim 12, wherein said client computer system comprises a personal computer or a laptop computer or a notebook computer or an Internet-enabled cellular phone or an Internet-enabled personal digital assistant or a web television system.

10 15. A carrier medium comprising program instructions, wherein the program instructions are executable by a computer system to implement a method of:

- storing one or more records in a database, wherein each record comprises an Internet address and a time value, and wherein each record corresponds to a distinct computer access to a web site;
- receiving a first request from a first computer to access the web site;
- 15 sending a request for information to said first computer, wherein said information comprises a first Internet address and a first time value corresponding to said first computer;
- receiving said information;
- determining whether a matching record for said first Internet address and
- 20 said first time value exists in said database;
- identifying said first computer as a distinct computer user if said matching record does not exist in said database.

25 16. A system for identifying a distinct computer user accessing a web site, the system comprising:

- a client computer system operated by a computer user;
- a web site server computer system;

wherein the client computer system is operable to connect with the web site server for gaining access to said web site in response to a request from said computer user; and

wherein the web site server is operable to:

5 store one or more identifiers, wherein each identifier corresponds to a computer user accessing said web site, wherein said each identifier comprises an Internet address and a time value;

receive a request from a first computer user to access the web site, wherein said request comprises a first identifier corresponding to said first computer user  
10 accessing said web site;

search for an identifier matching said first identifier among said one or more stored identifiers;

identify said first unique identifier as a distinct computer user if said searching for said first unique identifier did not result in a match.  
15

17. The system of claim 16, further comprising a time keeping device of said web site server computer system, wherein a time value of said time keeping device is synchronized with a global time keeping standard clock.

20 18. The system of claim 16, wherein said client computer system comprises a personal computer or a laptop computer or a notebook computer or an Internet-enabled cellular phone or an Internet-enabled personal digital assistant or a web television system.

19. A carrier medium comprising program instructions, wherein the program  
25 instructions are executable by a computer system to implement a method of:  
storing one or more identifiers, wherein each identifier corresponds to a computer user accessing a web site, wherein said each identifier comprises an Internet address and a time value;

receiving a request from a first computer user to access the web site,  
wherein said request comprises a first identifier corresponding to said first  
computer user accessing said web site;

5            searching for an identifier matching said first identifier among said one or  
more stored identifiers;

         identifying said first unique identifier as a distinct computer user if said  
searching for said first unique identifier did not result in a match.

10        20.    A method for identifying a distinct computer user accessing a web site, the  
method comprising:

         receiving a request from a first computer user to access the web site,  
wherein said request comprises an Internet address and a time value  
corresponding to said first computer user accessing said web site;

15            determining whether the first computer user is a distinct user by:  
         comparing said time value and said Internet address with a database of  
time value information and Internet address information compiled from previous  
web site accesses.

20        21.    The method of claim 20, wherein said time value is associated with an event  
defined by said computer user.

22.    The method of claim 21, wherein said event is a launch of a web browser software  
on a computer operable by said computer user.

25        23.    The method of claim 20, wherein said time value is generated by a time keeping  
device, wherein said time value is synchronized with a global time keeping standard  
clock by said time keeping device.

24. The method of claim 20, wherein said Internet address is an Internet Protocol (IP) address.

25. The method of claim 20, wherein the database is an object oriented database or a relational database.

26. A system for identifying a distinct computer user accessing a web site, the system comprising:

a client computer system operated by a computer user;

10 a web site server computer system;

wherein the client computer system is operable to connect with the web site server for gaining access to said web site in response to a request from said computer user; and

wherein the web site server is operable to:

15 receive a request from a first computer user to access the web site, wherein said request comprises an Internet address and a time value corresponding to said first computer user accessing said web site;

determine whether the first computer user is a distinct user by:

20 compare said time value and said Internet address with a database of time value information and Internet address information compiled from previous web site accesses.

27. The system of claim 26, further comprising a time keeping device of said web site server computer system, wherein a time value of said time keeping device is  
25 synchronized with a global time keeping standard clock.

28. The system of claim 26, wherein said client computer system comprises a personal computer, a laptop computer, a notebook computer, an Internet-enabled cellular phone, an Internet-enabled personal digital assistant, or a web television system.

29. A carrier medium comprising program instructions, wherein the program instructions are executable by a computer system to implement a method of:

5 receiving a request from a first computer user to access a web site, wherein said request comprises an Internet address and a time value corresponding to said first computer user accessing said web site;

determining whether the first computer user is a distinct user by:

10 comparing said time value and said Internet address with a database of time value information and Internet address information compiled from previous web site accesses.

30. A method for counting web hits at a web site, the method comprising:

15 receiving a request from a computer user to access the web site, wherein said request comprises an Internet address and a time value corresponding to said computer user accessing said web site;

determining whether the computer user is counted as a web hit by:

20 comparing said time value and said Internet address with a database of time value information and Internet address information stored from previous web site accesses.

31. The method of claim 30, wherein said time value is associated with the launch of a web browser software on a computer operable by said computer user.

25 32. The method of claim 30, wherein said time value is generated by a time keeping device, wherein said time value is synchronized with a global time keeping standard clock by said time keeping device.

33. The method of claim 37, wherein said Internet address is an Internet Protocol (IP) address.

34. A system for counting unique hits on a web site, the system comprising:  
a client computer system operated by a computer user;  
a web site server computer system;  
5 wherein the client computer system is operable to connect with the web  
site server for gaining access to said web site in response to a request from said  
computer user; and  
wherein the web site server is operable to:  
receive a request from a computer user to access the web site, wherein said  
10 request comprises an Internet address and a time value corresponding to said  
computer user accessing said web site;  
determine whether the computer user is counted as a unique hit by:  
compare said time value and said Internet address with a database of time  
value information and Internet address information stored from previous web site  
15 accesses.
35. The system of claim 34, further comprising:  
a time keeping device of said web site server computer system, wherein a time  
value of said time keeping device is synchronized with a global time  
20 keeping standard clock.
36. The system of claim 34, wherein said client computer system comprises a  
personal computer, a laptop computer, a notebook computer, an Internet-enabled cellular  
phone, an Internet-enabled personal digital assistant, or a web television system.  
25
37. A carrier medium comprising program instructions, wherein the program  
instructions are executable by a computer system to implement a method of:





## **ABSTRACT OF THE DISCLOSURE**

An improved method and system for identifying individual users accessing a web site. A web site server is able to identify distinct users by using a unique identifier associated with each client computer system requesting access to the web site. The unique identifier comprises an Internet address, such as an Internet Protocol (IP) address, and a time value associated with each client computer system requesting access to the web site. On starting up a web browser, an application program or browser plug-in may synchronize the internal clock included with the client computer system with a global time standard. The synchronized time value may be based on an event associated with the client computer system, such as the start of a web browser. A web site server may determine the uniqueness of the client computer system by comparing unique identifier records of users accessing the web site. A user may be identified as distinct if no matching record exists in the database. Multiple client computer systems having a common Internet address may be identified by using this method. Users privacy is also protected as the unique identifiers are erased when the client computer system's user exits the web browser or powers down the computer.

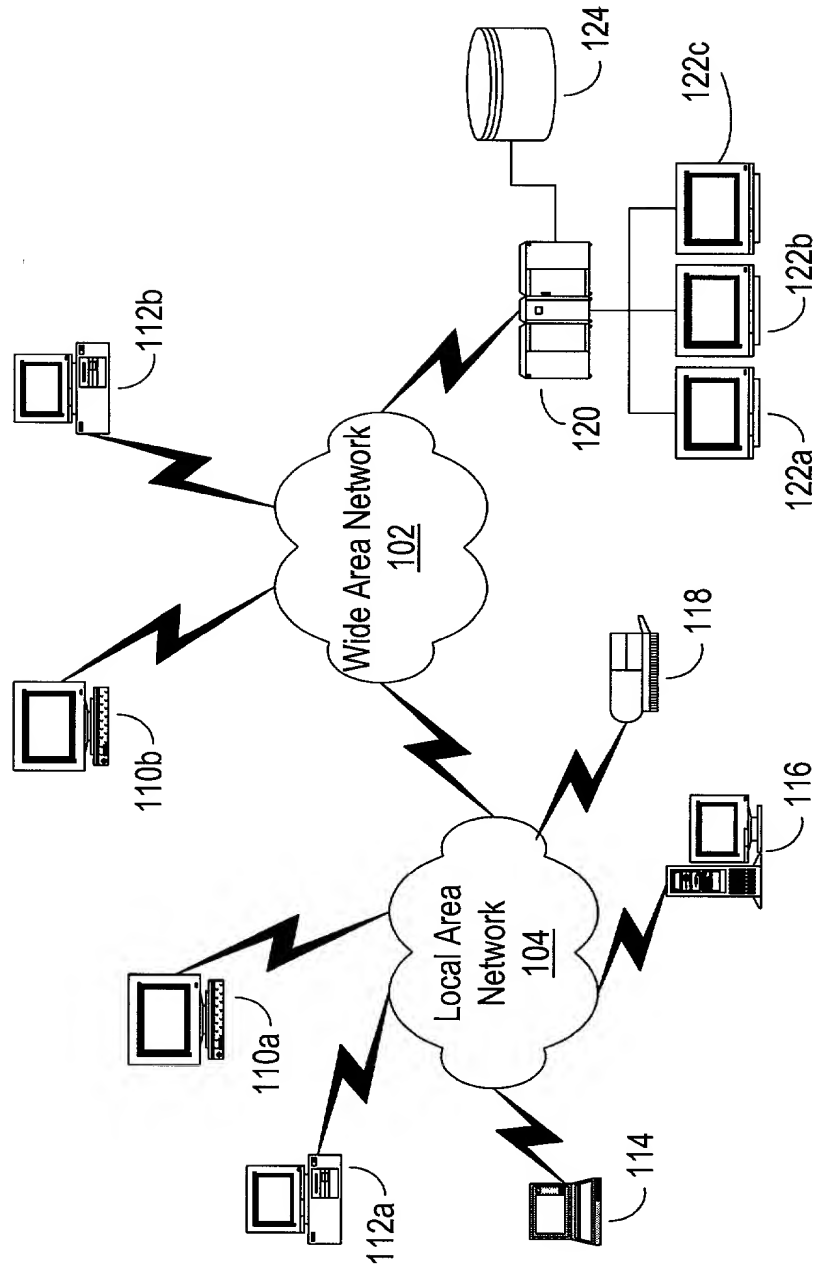


FIG. 1

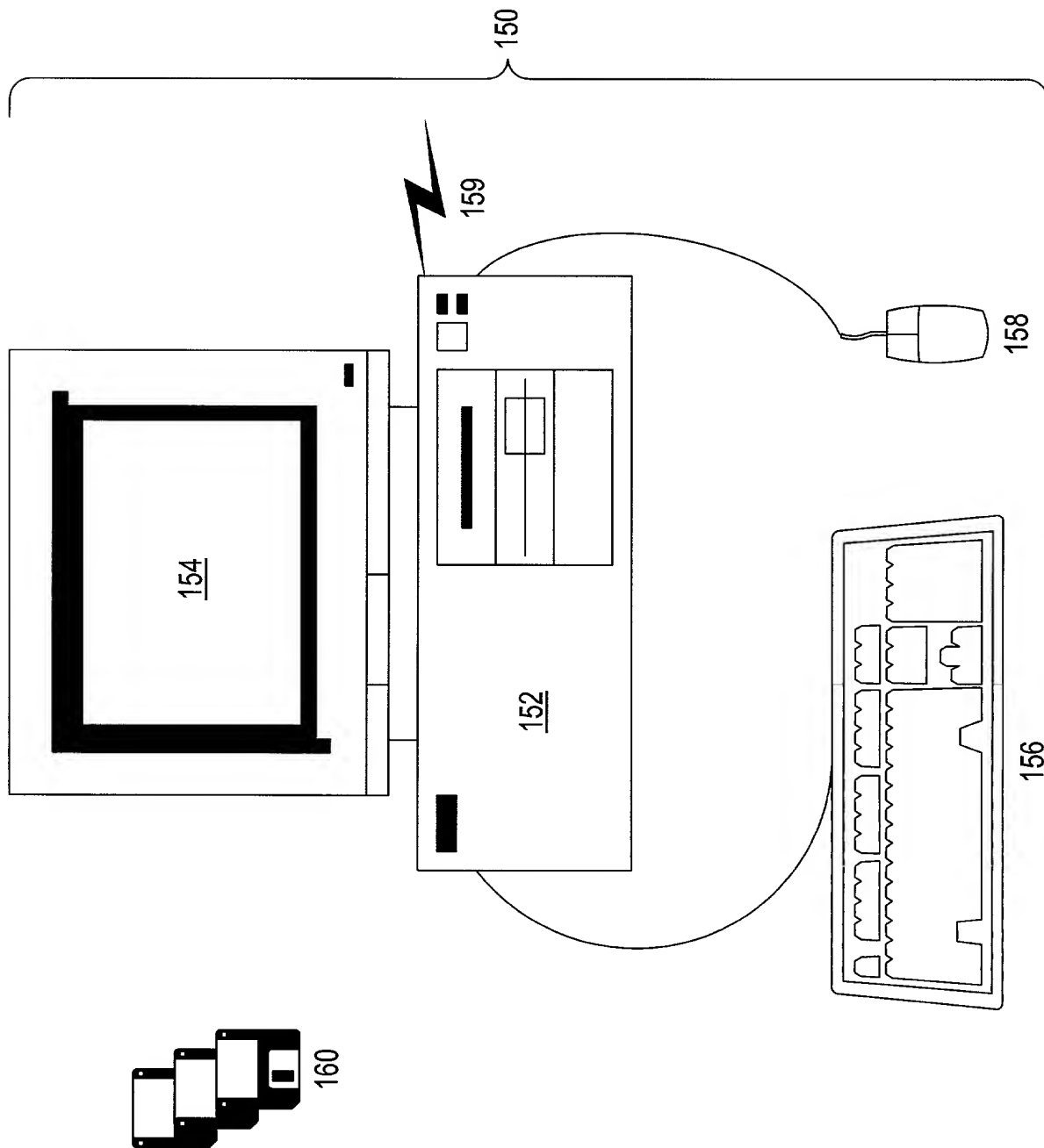


FIG. 2

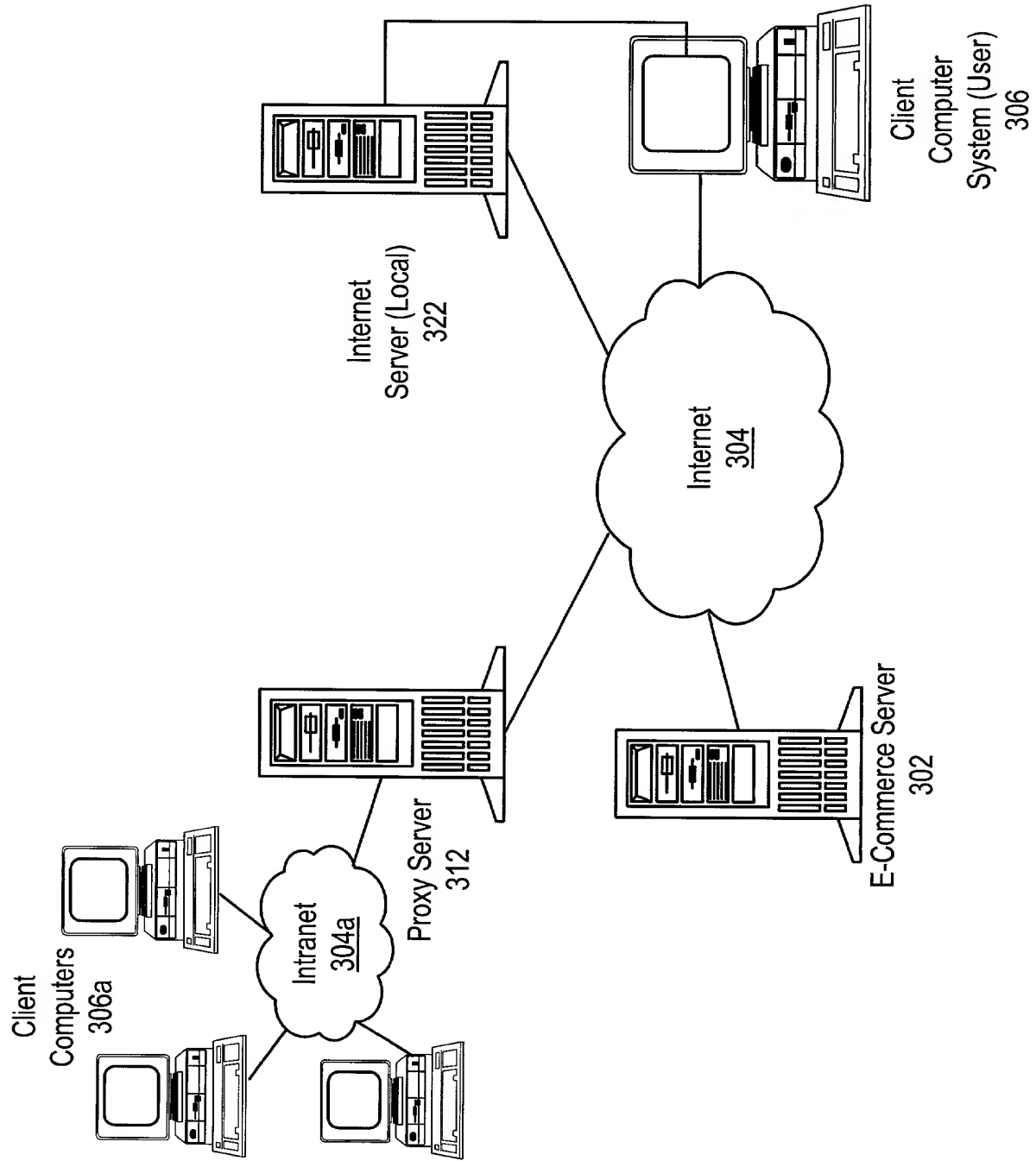


FIG. 3

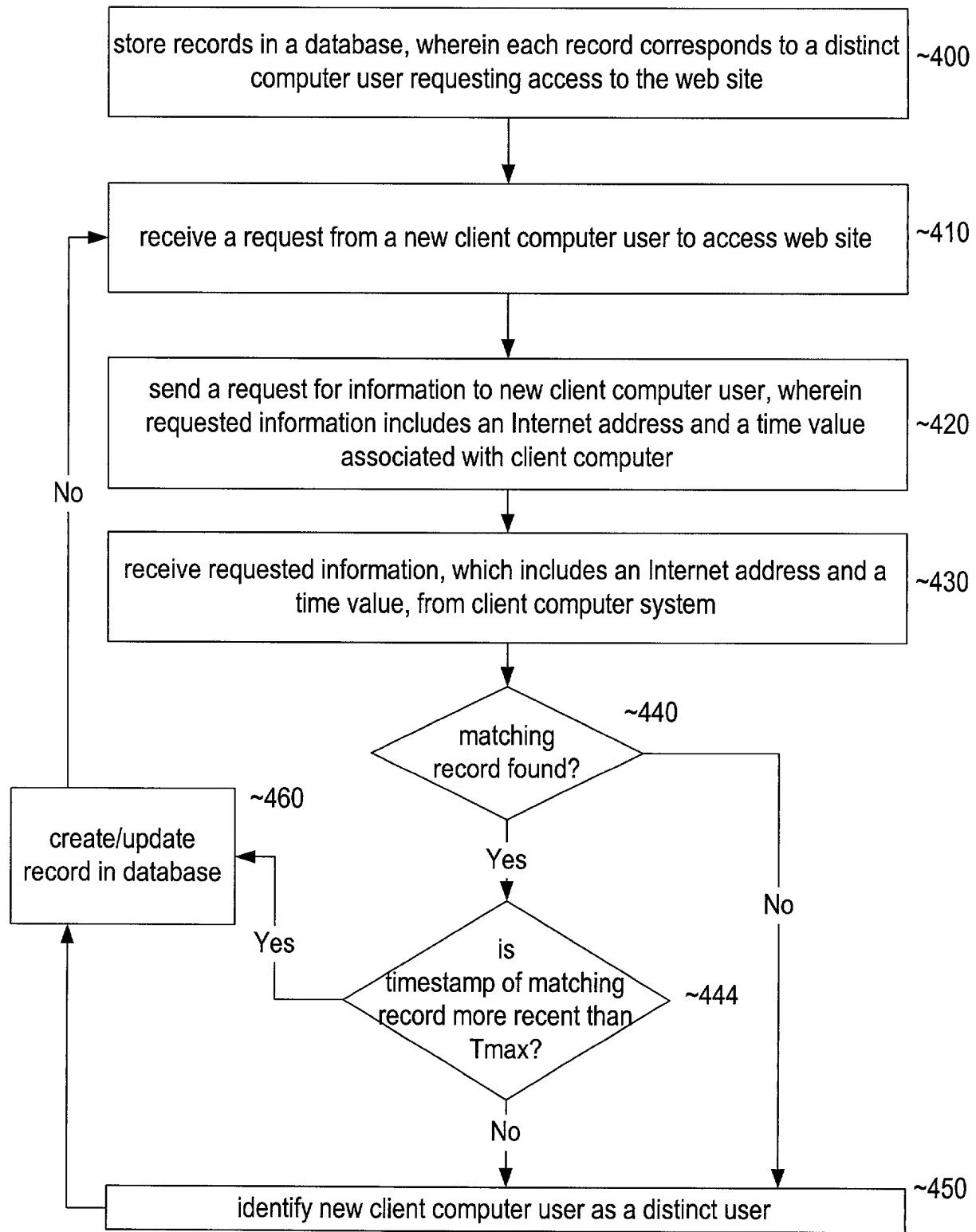


FIG. 4

500			510		530	
Internet address		Time value		Time stamp		
IP000		TV000		TS000		
IP000		TV001		TS001		
IP001		TV002		TS002		
IPNNN		TVNNN		TSNNN		

FIG. 5

**DECLARATION AND POWER OF ATTORNEY**

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **"AN IMPROVED SYSTEM AND METHOD FOR IDENTIFYING INDIVIDUAL USERS ACCESSING A WEB SITE,"** the specification of which:

- ☒ is attached hereto.  
☐ was filed on \_\_\_\_\_ as Application Serial No. \_\_\_\_\_  
 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed.

<u>Prior Foreign Application No.</u>	<u>Country</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>	<u>Priority</u> <u>Claimed</u>	<u>Cert. copy</u> <u>Attached</u>
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>
N/A	

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Parent Application No.</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>	<u>Parent Patent No. (if applicable) or Status</u>
N/A		

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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